Facts and ideas from anywhere

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"THE THING" THAT CHANGED THE WORLD

They called it "the beast," "the gadget," "the thing," "the device." Sometimes they just called it "it." The one thing nobody called it was what it actually was—the world's first atomic bomb. When it exploded about 150 miles from Los Alamos, New Mexico, where *it* was developed, the federal government had already spent nearly $2 billion to make this event happen, and $2 billion in 1940–1945 was real money! The code name given for the test was Trinity, after a John Donne Holy Sonnet. The name was chosen by Dr. J. Robert Oppenheimer, the scientific director of the project, who smoked about 100 cigarettes a day, loved martinis, and weighed <115 pounds. Major General Leslie R. Groves, who weighed over twice as much and detested smoking and alcohol, directed the bomb program and named it the Manhattan Project. Groves lived a life of blameless domesticity with his wife and 2 children. Oppenheimer had a communist mistress who later committed suicide and a wife who had been married three times before. Oppenheimer, an intellectual, believed in open discussion. Groves was obsessed with secrecy.

Groves' capability was legendary. He oversaw the construction of the Pentagon, then the largest building in the world, and he built it in just 16 months. He ruled the bomb project's empire—at one point comprising >100,000 men and women, with an iron fist. Groves chose Oppenheimer to direct his top-secret laboratory, a choice that proved correct. Groves crushed any obstacles in his path to producing a workable, deliverable atomic bomb. All of this information and that which follows comes from Stephen Walker's splendid new book, *Shockwave: Countdown to Hiroshima*, which commemorates the 60th anniversary of the dropping of the 2 atomic bombs in Japan in August 1945 (1).

While Groves and Oppenheimer were waiting for the storm in the New Mexico desert to clear on July 15, 1945, President Truman was meeting with Prime Minister Winston Churchill and was soon to meet with Premier Joseph Stalin in Potsdam. The war in Europe had been over for 2 months. Both Truman and Churchill knew that Stalin was anxious to declare war on Japan, but neither wanted that. However, on July 15, neither Truman nor Churchill nor Groves nor Oppenheimer nor any others working on the Manhattan Project knew for certain whether the bomb sitting on the tower in the desert would go off or not. If the bomb did go off, there was some discussion about whether or not it would set fire to the entire atmosphere of the earth and kill everyone on this planet.

On July 16, 1945, at 5:29 AM, the bomb fell from the tower and exploded. Within a millisecond, the temperature at the core of the explosion was 60 million degrees Celsius, 10,000 times hotter than the surface of the sun, and its blinding flash was far brighter. It lit the mountains and the desert. Within seconds, the explosion had sucked thousands of tons of sand, dust, sagebrush, juniper bushes, rattlesnakes, jackrabbits, mating frogs, bits of the pulverized steel tower, and every kind of organic and inorganic matter from the earth into a mammoth, rapidly expanding and rising (at 5000 feet/minute) radioactive cloud. Behind the light, after a short eerie silence, came the doomsday-like sound, tearing through the desert at 12 miles a minute. The mountain ranges bounced the sound back and forth across the desert, and the ground trembled. Along with the sound came the shockwave, a hundred billion atmospheres of pressure ripping outward from the core like a hurricane—except this hurricane moved initially at several hundred miles per hour, battering and blasting everything in its path. Within seconds of the explosion, the B-29 observation plane flying 25 miles from the tower saw the sky become a violent orange-red color and saw a red ball of fire burst through lower clouds. It raced past the bomber's altitude of 25,000 feet until it reached >40,000 feet (8 miles).

Meanwhile, President Truman was touring nearby Berlin with his secretary of state. For >5 years, Allied bombs had rained down on the city, and in the last weeks of the war the Russians had poured a never-ending rain of shells and rockets into the city. Although 4 million people had once lived there, now barely a house or building was intact. Truman from his car saw only a few survivors, and the spectacle haunted him. Later that day, Truman heard the news of the "successful" explosion in New Mexico.

Just 3½ hours after Trinity blew its great hole in the ground, the USS *Indianapolis* set sail from California carrying another atomic bomb to Tinian Island, a dot in the Pacific Ocean 1500 miles south of Japan and now the biggest air base in the world with 4 parallel runways, each 8500 feet long. The pilot, Paul Tibbets, and crew on Tinian Island had already been selected to carry the first atomic bomb to Japan, and Tibbets had already been briefed at Los Alamos on what the mission was about.

By mid 1945, almost every major Japanese city except Hiroshima, the country's seventh-largest city, had been obliterated by Allied bombers. Stationed there were 43,000 troops; 43,000 Koreans were also working there, mainly in forced labor. Hiroshima had been deliberately reserved by the Americans for atomic destruction. No American bomber was allowed to touch it. Choosing a target for the atomic bomb had been difficult. Part of

the problem was that there was little left in Japan to be bombed. Already some 178 square miles of Japanese cities had been razed to the ground by American bombs. Twenty-two million Japanese were now homeless, almost a third of the country's population. An estimated 900,000 Japanese had already died in the bombings, considerably more than the 780,000 combatant Japanese who had died in the Pacific battles. Because Hiroshima was the largest untouched target, that city was chosen. It was sufficiently military, with its army depot and port, to salve some consciences about the possible impact of an atomic bomb on a population of 300,000 human beings. Hiroshima also had adjacent hills that were likely to produce a focusing effect, which could considerably increase the blast damage. Thus, Hiroshima could probably produce the best "shock value." Hiroshima's pristine condition virtually guaranteed that the weapon's initial use would be spectacular. Apart from Kyoto, no other city was so well preserved. The USA wanted to make the most spectacular blast in history and then publicize it to force the Japanese to surrender.

Meanwhile at Potsdam, Germany, after the day's session, Truman ambled over to Stalin, who was standing with his interpreter. While Churchill and Jimmy Byrnes (the secretary of state) watched, Truman casually mentioned to Stalin that we had a new weapon of unusual destructive force. The Russian premier showed no particular interest. All he said was that he was glad to hear it and hoped we would make good use of it against the Japanese. (In actuality, Stalin had spies in the USA and knew exactly what was going on regarding the atomic bomb. Less than an hour after Truman's disclosure, Stalin was closeted with his foreign minister, Molotov, telling him what he had heard from Truman and ordering a speed-up of their atomic program. The nuclear arms race was on.)

The USS *Indianapolis* arrived at Tinian Island within 10 days. The big wooden crate on the ship was carefully lowered from the hanger deck down to one of the boats below. Into another waiting boat was lowered the uranium 235 projectile for *Little Boy,* the name given the first combat atomic bomb. Six hours after depositing the cargo safely on Tinian, the USS *Indianapolis* lifted anchor and set course to the island of Leyte, a further 1400 miles west, but never got there. On July 29, the unescorted warship was spotted by a Japanese submarine and sunk. Of the >800 men who abandoned the sinking ship, >500 died in the waters, mainly from shark attacks, before the remainder were rescued nearly 3½ days later.

On August 1, while the men of the USS *Indianapolis* were dying in the Philippine Sea, the uranium 235 projectile they had delivered was carefully installed inside the bomb. Finally, on August 5 the weather cleared. The scientists adjusted the fuses of the bomb so that the bomb would detonate at exactly 1850 feet above ground, the height Oppenheimer had predicted would cause the maximum demolition of structures in the target area. (The radar antennas of the bomb ironically had been designed in the late 1930s by a Japanese scientist.)

The 9700-pound bomb was released over Hiroshima on August 6, 1945, at 9:15 AM. The bomb fell at a speed of 700 miles per hour, or 1138 feet per second. Within a 1-km radius of the hypocenter, the thermal energy contained in that single moment's flash was intense enough to cause internal organs to evaporate, boiling off intestines in less than a fraction of a second. Birds ignited in mid air; telegraph poles, trees, clothing, thatched roofs, wooden buildings, household pets, and entire streetcars spontaneously combusted; steeled framed buildings liquefied; rubble and bone fused together in a single amorphous mass. Watches and clocks suddenly stopped, their hands permanently burned into their faces, forever recording the precise moment of detonation. Hundreds of fires sprang up simultaneously all across the city. In some cases, individuals were so completely incinerated that nothing remained but their shadows. More than 200 radioactive isotopes spewed out of the bomb's core and into the dust cloud. After the flash came the shockwave, ripping out from the hypocenter at 7200 miles per hour, 10,000 feet a second, producing a wall of high pressure that smashed through doors, windows, houses, offices, temples, hospitals, shops, stalls, restaurants, factories, buses, schools, animals, and people. The shockwave slammed through the city with an initial force of nearly 7 tons per square meter, destroying almost 60,000 buildings in its wake. It killed perhaps 80,000 people in those very first seconds. The plane returned to Tinian 12 hours and 13 minutes after take-off after covering a distance of 2960 miles. The USSR declared war on Japan 3 days later.

On July 26, 1945, 12 days earlier, the Japanese people had been issued an ultimatum by the Allies to surrender. The Japanese leaders promptly rejected that ultimatum. After the atomic bomb fell on Hiroshima, the Japanese still made no move toward surrender.

On August 9, 1945, 3 days and 3 hours after the destruction of Hiroshima, another atomic bomb fell on Nagasaki. This bomb, called *Fat Man,* had a force of 22,000 tons of TNT—nearly 1½ times more powerful than *Little Boy,* which had been released over Hiroshima. The initial target for *Fat Man* was Kokura, 100 miles to the northeast, but that city was obscured at the time by a thick cloud. The weather, which was Kokura's salvation, sealed Nagasaki's fate. *Fat Man*'s hypocenter curiously was almost directly over the Mitsubishi armament factories that had produced the torpedoes used in the attack on Pearl Harbor. *Fat Man* killed about 70,000 people.

Later, Oppenheimer resolutely opposed the development of the hydrogen bomb, a weapon that when first tested in 1952 was 1000 times more powerful than *Little Boy* or *Fat Man*. When Oppenheimer resigned in October 1945 from his post as director of the Los Alamos laboratory, his parting words were: "If atomic bombs are to be added to the arsenals of the warring world then the time will come when mankind will curse the name of Los Alamos and Hiroshima."

On September 15, 1945, Major General Groves wrote a 3-page memo to the chief of staff of the Army Strategic Air Force, entitled "Estimated Bomb Requirements For Destruction of Russian Strategic Areas." The document contained 3 columns. The first was a list of 66 major Soviet cities. The second specified each city's size in square miles. The third detailed the number of atomic bombs required to destroy it. Six bombs would be needed for Moscow; a total of 204 bombs would be needed to wipe out every city on the list. Thus, just over a month after the end of World War II, when the corpses of Hiroshima and Nagasaki were still being cremated, American strategists were already focused on the USSR.

Today, the Trinity site is part of the White Sands Missile Range. The Los Alamos National Laboratory still survives, al-

though much enlarged, as an operational weapons development facility. The tiny island of Tinian, where the *Enola Gay* parted on its mission to Hiroshima and the *Bockscar,* on its eventual mission to Nagasaki, is now a swath of cracked coral, half swallowed in jungle. The bomb assembly buildings, once the most secret place on the island, are now deserted ruins, the weeds going through the old foundations. The 509th compound where the crews lived, ate, and slept had been lost to the jungle. There are no signs or plaques. The foliage is impenetrable.

As detailed by Helen Caldicott, MD, in *The New Nuclear Danger,* there are now 53,000 nuclear bombs in the world (2). The USA and Russia possess most of them, and most now are hydrogen bombs, not atomic bombs. Israel possesses 400 bombs, all hydrogen bombs. The other countries possessing nuclear weapons include the United Kingdom, France, India, Pakistan, and China. Presently, there are 60 hydrogen bombs targeted on Moscow and 40 hydrogen bombs targeted on New York City. Each Trident submarine carries 8 hydrogen bombs, enough to destroy most countries. "Splitting the atom changed everything," said Albert Einstein.

How can we prevent another nuclear bomb from killing people? Warren Buffett, the financial guru, has predicted that one will explode in the USA within the next 20 years, and the most likely cities are New York, Washington, DC, Los Angeles, and then Dallas. Nuclear power is clearly the world's number one problem.

SPENDING ON WAR AND PORK

Earlier this year I attended my Henry Grady High School 50th+ reunion in Atlanta. When I was a student there, the brick buildings could not accommodate everyone, and, as a consequence, a number of adjacent wooden shacks were built. Recently, $25 million was put into renovating old Henry Grady High School, and now this place is magnificent. When I was there, the student body and teachers were all white; it became essentially all black, and now it is about 70% black and 30% white. The graduates have a commendable record of getting into good colleges. Thus, I was proud to have gone there and proud of the city of Atlanta for investing in this place to make it something students and teachers alike could be proud of.

That kind of money would be available for every high school, junior high school, and elementary school in the USA if it were not for war. The USA is spending $6 billion monthly for the war in Iraq and Afghanistan. Linda Bilmes (3), who teaches budgeting and public finance at the Kennedy School of Government, analyzed the likely long-term expenses of these 2 wars. So far, $258 billion has already been spent on operations in Iraq and Afghanistan. If the war goes on another 5 years, an additional $460 billion will be spent. The biggest long-term costs of the Afghanistan and Iraq wars are disability and health payments for returning troops, which will be incurred even if hostilities were to stop tomorrow. The USA currently pays >$2 billion in disability claims each year for the 159,000 veterans of the 1991 Gulf War, even though that conflict lasted only 5 weeks, with 148 dead and 467 wounded. Even assuming that the 525,000 American troops who have so far served in Iraq and Afghanistan will require treatment only on the same scale as their predecessors from the Gulf War, these payments are likely to run at $7 billion a year for the next 45 years, or a total of about $315 billion. All of this spending will need to be added to the federal debt. Conflict in the Middle East has also played a part in doubling the price of oil from $30 a barrel just prior to the invasion of Iraq in March 2003 to $70 a barrel today. (Each $5 increase in the price of oil reduces our national income by about $17 billion a year.) If the American military presence in the region lasts another 5 years, the total outlay for the war could exceed $1.3 trillion, or $11,300 for every household in the USA, and that does not include the human costs of nearly 2000 American military personnel killed and nearly 15,000 wounded so far in Iraq and Afghanistan.

Even without the expenditures of war, federal pork spending has exploded in recent years. The highway bill, which passed in July 2005, contained 6371 pork projects inserted by members of Congress. Overall, the number of pork projects, according to Chris Edwards (4), director of tax policy at the Cato Institute and author of *Downsizing the Federal Government*, has increased 10-fold during the past 10 years. And most pork spending is for activities that are properly state, local, or private, for which the federal government has no role: $350,000 for the Rock and Roll Hall of Fame in Cleveland; $218,000 for a seafood plant in Oregon; $250,000 for an Alaska statehood celebration; $250,000 for sidewalk repairs in Boca Raton, Florida; $1.4 million for upgrades to the Ted Stevens Airport in Alaska; and $100,000 to Rochester, New York, for a film festival. The first 2 projects are gifts to private businesses. The next 2 projects should be funded locally. The final 2 projects are for local government activities that ought to be private. If US airports were privatized, as they have been in other countries, they could be upgraded by investors as needed based on local demands.

And the expenditures from the highway bill in Alaska are even more appalling (5). There's the $250 million for a bridge to connect the airport on Gravina Island to Ketchikan (population 14,000), and the bridge will rival the Golden Gate and Brooklyn Bridges in length and height. Then there's $230 million for a bridge between Anchorage and a swampy, undeveloped port. There's another $15 million for a road between Juneau and Skagway, separated by the longest fjord in North America. The project will cost about $300 million to complete. The 3 communities directly affected—Haines (population 2,400), Skagway (population 870), and Juneau (population 31,000)—have voiced opposition to the road because it is a waste of money, it will be too dangerous to drive in winter (which is most of the year), and the present ferry system is good. This piece could go on. It is *our* money that the politicians are playing with! I resent all of this spending of taxpayer money, whether for war or for hometown pork.

GARBAGE, WASTE, AND CONSUMPTION

Elizabeth Royte recently published *Garbage Land: On the Secret Trail of Trash,* in which she tells what happens to the things we have "disposed of" (6). Unfortunately, the message is that the only way to decrease the amount of garbage is to decrease the amount of consumption. The garbage we create will always be with us: in the air we breath, the water we drink, and the food we consume. Each American throws away an average of 4.3 pounds of trash each day! And, there is a great disparity between our personal waste and the waste it takes to produce our waste. For every 100 pounds of product that's made, 3200 pounds of waste

are generated. To put that another way, for the roughly 210 million tons of municipal solid waste the US generates each year, we generate an additional 7.6 billion tons of industrial waste; 1.5 billion tons of mining waste; 3.2 billion tons of oil and gas, electric utility, and cement kiln waste; and 0.5 billion tons of metal-processing waste. A single barrel of waste in our curbside trash can is indicative of 32 barrels of manufacturing waste. Thus, if each of us could cut our garbage in half, we could eliminate 16 barrels off the line.

Apparently, finding a place to put our waste isn't the problem. Plenty of landfill space and incinerator capacity is available. But, transporting waste and unloading it are becoming increasingly expensive, and no matter how sophisticated their design, landfills and waste-to-energy plants are not environmentally benign. They leak and they spill, and their poisons are slowly accumulating in the creatures with which we share this planet. Landfills can't be safely reused for hundreds of years, if then, and incinerated materials are lost to reuse forever. If we have a garbage problem, it is that landfills and incinerators make it too easy to get rid of things. Burying or burning waste only spurs more resource extraction to make more products. We need to think more about the enormous amount of material and energy that goes into the stuff we use for an instant and then discard, such as a tin can. Royce goes on: "We don't need better ways to get rid of things. We need to *not* get rid of things, either by keeping them cycling through the system or not designing and desiring them in the first place."

What will the garbage landscape look like in 50 or 100 years? We burn our electronic waste, and its chemical fallout shows up in the breast milk of Eskimos and in the flesh of animals we eat. We bury our household waste, and poisons rise into the air and leach into our waterways. We can recycle and compost as much as we want, but if the total waste stream continues to grow, as it is doing, we will never escape our own mess. If we don't wake up and make the connection between our economy and the environment (which provides the resources to make all our stuff), the planet will eventually do it for us. Garbage will win in the end.

MCDONALD'S 24/7

McDonald's has 13,700 outlets in the USA. About half of them now stay open until about midnight, and about 25% are open 24 hours a day, 7 days a week (7). The extended hours are for drive-in service only. Wendy's International was the first of the fast-food chains to launch extended hours. Starbucks now has 40 around-the-clock outlets, including one in Arlington. Want a 3:00 AM hamburger and a cup of coffee? Help yourself!

LIQUID CANDY

Michael F. Jacobson, PhD, executive director of the Center for Science in the Public Interest, recently produced a monograph titled *Liquid Candy,* and the following facts came from it (8). Americans consume gargantuan quantities of carbonated soft drinks. Companies annually produce enough soda pop to provide 557 twelve-ounce cans—52 gallons—to every man, woman, and child in the USA. Adding in noncarbonated soft drinks brings total consumption to 68 gallons of nutritionally worthless beverages—or 85,000 calories—per year. Carbonated soft drinks are the single biggest source of calories in the American diet, providing about 7% of calories; adding in noncarbonated drinks brings the figure to 9%. Teenagers get 13% of their calories from carbonated and noncarbonated soft drinks. Soft drinks provide large amounts of sugar, mostly high-fructose corn syrup. Soda pop provides the average 12- to 19-year-old boy with about 15 teaspoons of refined sugars each day and the average girl with about 10 teaspoons a day.

Soft drinks are a problem not only for what they contain but for what they push out of the diet. In 1977–1978, boys consumed more than twice as much milk as soft drinks, and girls consumed 50% more milk than soft drinks. By 1994–1996, both boys and girls consumed twice as much soda pop as milk. Heavy soft drink consumption is associated with lower intake of numerous vitamins, minerals, and dietary fiber. And soft drinks are directly related to weight gain. Frequent consumption of soft drinks also may increase the risk of osteoporosis, especially in people who drink soft drinks instead of calcium-rich milk. Frequent consumers of soft drinks may also be at high risk of kidney stones.

Soft drinks, of course, are heavily consumed in part because companies promote them vigorously and market them everywhere—in stores, restaurants, gas stations, museums, vending machines, and schools. Companies spend about $700 million on media advertising each year and hundreds of millions more on other promotional activities, which may involve musicians, actors, contracts with schools, etc. Drink water. It's the best liquid.

NATIONAL SLUGGISHNESS

Bill Bryson quoted a University of California study that found that 85% of Americans are "essentially" sedentary. A piece by Bronwyn Lance Chester (9) indicated that 35% of American adults are totally sedentary, meaning the only walking is to the kitchen and bathroom. The average American walks only 350 yards a day! One reason for this lack of movement may be suburban sprawl, where sidewalks are absent. With gas prices skyrocketing, walking suddenly looks attractive. Even the federal government is encouraging folks to stroll. The just-signed Federal Highway Bill provides $100 million for pedestrian and bike paths. We need these special paths for walkers because in a country with so many automobiles, pedestrians have become an endangered species. A country singer explained, "I jumped in my pickup and drove to the fridge for a beer."

FIRST CANINE CLONED

As the *Wall Street Journal* says, "Move over Dolly. They've cloned man's best friend (10)." It's an Afghan hound. The laboratory's success at creating the first cloned canine is likely to reinforce South Korea's leadership in the field and stoke worries by American scientists that ethical and regulatory concerns may be hampering advances in the USA. The South Korean team's 3-year effort to clone a dog was motivated by an interest in developing new models of human disease that could be used for testing drugs or other treatments. Ever since scientists in Scotland cloned Dolly, a sheep, in 1996, researchers have pressed forward with attempts to copy other mammals, succeeding with rats, pigs, cows, and horses. Copying dogs has proved far more difficult because their eggs, unlike those of most mammals, mature outside of the ovaries, making it difficult to predict when they have become mature enough to harvest. Copying dogs also opens the door for mass pet cloning in a way that replicating sheep never could. To

achieve their goal, the Korean scientists implanted >1000 cloned embryos into 123 surrogate mother dogs. That produced only 3 pregnancies, from which 1 puppy was stillborn and a second died shortly after birth. None of the surrogate mothers died. The new cloned dog named *Snuppy* has no obvious physical abnormalities. To clone Snuppy, the genetic material was extracted from a skin cell from the Afghan hound and implanted into an egg harvested from one of the surrogate mothers. They reconstructed the egg and stimulated it to begin dividing and then implanted it in the uterus of a yellow Labrador retriever.

DISCLOSURE OF MEDICAL COSTS

Most people don't know how much medical care costs. Private and government health coverage has helped shield us from bills. Even with newer consumer-driven plans that employ health savings accounts, which give people more of a financial stake, pricing information can be hard to come by. A major health insurer, Aetna, is trying to change that (11). It is making available online the prices it has negotiated with Cincinnati-area physicians for hundreds of medical procedures and tests. The initiative, which Aetna hopes to take eventually to other parts of the country, aims to give patients the tools to comparison shop and make savvier decisions with their health care dollars.

Aetna is the first major health insurer to publicly disclose the fees it negotiates with physicians. Some in the health care industry say the move is likely to push more insurers to follow suit, which in turn would give a significant boost to consumer-driven health plans. These plans combine high-deductible insurance policies with tax-favored savings accounts that consumers can use to pay for medical care until they meet the deductible. The idea is that because people must pay for a big chunk of their care out-of-pocket—and can build up any money they don't spend on health care—they will be wiser in how they spend that money. For that approach to be effective, consumers obviously need to know how much medical treatment costs.

Reluctance by physicians and health insurers to provide their prices has left many patients clueless about the cost of their care until they receive the bill after the fact. With Aetna's new listings, consumers enrolled in any Aetna health plan will be able to log on and comparison shop for procedures and tests, ranging from an annual physical to an electrocardiogram to vaccinations. So far, the price schedules include every Cincinnati-area primary care physician or specialist in Aetna's network and prices for 600 common services for which the Hartford, Connecticut–based insurer receives medical claims. Although insured patients are supposed to be charged the same prices for their out-of-pocket costs that physicians or hospitals would charge the insurer, insurers and many health care providers generally consider these negotiated prices proprietary information that they do not want publicized. At most, health plans have made available just a range or estimated averages of what a service costs in a specific region.

Aetna has found that prices vary from physician to physician for a large range of reasons, including the physician's prestige, the scarcity or surplus of physicians in a given specialty, or whether the physician belongs to a small practice or large medical group. The negotiated fees typically are discounted from the list prices that physicians charge uninsured patients and are available only to Aetna and its plan members. The listings can be viewed by any Aetna member in the country, but so far only providers in the Cincinnati area are listed. It is apparent that more transparency of fees and charges is coming.

MERCK, VIOXX, AND A $253 MILLION VERDICT

How can 10 of the 12 jurors be sure that Vioxx caused the death of 59-year-old marathoner Robert C. Ernst (12)? Data from combining studies have shown that the frequency of heart attack in a large number of Vioxx takers was a bit higher than that in a similar-aged large control group. But in a single case, how can one be sure? There is no way. Vioxx may have very advantageous effects in decreasing the frequency of colonic cancer and in decreasing the frequency of gastrointestinal bleeding compared with other nonsteroidal antiinflammatory drugs, and yet this drug is now gone. The small increased frequency of cardiovascular risk for those in whom this drug prevented colonic cancer is a risk those subjects, I suspect, would gladly take. With a flood of Vioxx lawsuits soon to reach juries, this verdict will have important implications for both Merck and the entire drug industry. The big winners here are the plaintiff lawyers. Already about 5000 Vioxx cases have been filed, and analysts say the number could grow to 100,000 with a potential liability of $30 billion for Merck.

MORE ON SOUTH KOREA

Oh Jong Nam's recent book, *Korea: Your Future*, has startled her fellow Koreans (13). Dr. Oh headed the country's National Statistics Office in 2002 when it announced that the birth rate, the number of children born of each woman of child-bearing age, had fallen to 1.17. In the 1960s, women in South Korea were giving birth to an average of 6 children. By 1983, the birth rate had fallen to 2.08, and then the military government strengthened its birth control policy by denying medical insurance for maternity costs from a third pregnancy. That policy was not reversed until 1997.

Part of the declining birth rate is caused by women entering the labor force. Half of young South Korean women, who are among the world's most educated women, have careers outside the home. Women are waiting longer to get married. The average marriage age of women has risen from 25 years in 1985 to nearly 28 years today. For working women who marry and have children, there is far too little child care, and husbands don't make matters easier. Like women, South Korean men dedicate themselves to their jobs. A survey in 2000 showed that a working woman in Korea spent an average of 3.5 hours a day on housework, whereas working men spent just over 30 minutes. The dedication to work affects children as well. It's not uncommon for school children to spend an extra 8 or 9 hours a day with tutors or at private prep schools to cram for college entrance and career examinations.

Learning English has become so important that thousands of Korean couples live apart so one parent can enroll their son or daughter in schools in the USA, Canada, Australia, or other countries while the other parent stays behind working in South Korea. Divorce is also rising. South Koreans retire early. Some employers urge retirement of their employees at age 45, and those still working at 56 are considered "thieves" for taking work from the young, even though the unemployment rate is <4%. We Americans had better get more serious if we want to compete effectively in this new world.

LOU GEHRIG AND LOU GEHRIG'S DISEASE

As a youngster, I saw *The Pride of the Yankees*. It, of course, is the story of Lou Gehrig, who was born the same year as my mother, 1903, and died the same year as my father, 1941. A new book by Jonathan Eig titled *Luckiest Man* is much better than the movie and is a masterful sports biography (14). The information included here comes from that book.

Lou Gehrig was born to immigrant German parents on the northern end of Manhattan and was the only survivor of 4 children. His father appeared to prefer beer to industry, so Lou was nurtured and brought up mainly by his mother, whom he lived with until he was 30 when he married. Gehrig grew up with an incredible work ethic and at the same time was a great natural athlete. He excelled in every sport he tried, including soccer, basketball, football, and swimming. He swam across the Hudson River from Manhattan to New Jersey at age 11. When in high school he hit a grand slam out of Wrigley Field in Chicago. He attended Columbia University—his mother wanted him to become an engineer—and his baseball heroics there garnered the attention of the nearby Yankees.

Within 2 years he had become a fixture at first base for the Yankees. He did not miss a game for nearly 14 seasons, his famous record of 2130 consecutive games played bested by Cal Ripken, Jr., over a half century later in 1995. Gehrig played through bouts of low back pain, broken fingers, bone chips, and a "beanie" that swelled his head enormously. Of the 34 World Series games he played in, he drove in the winning run 8 times. In each of the 13 full seasons where he never missed a game, he drove in >100 runs, usually >150, at a time when the team was playing 149 to 157 games a year. (Now they play 162 games per season.) In his career he hit 493 home runs, had 1995 runs batted in, scored 1888 runs, had about 100 walks per season, struck out only 790 times, stole 102 bases, and had a batting average of .340. His batting average in the World Series games was higher, .361.

His last full season was 1938, and it is likely that during that season the first signs of *amyotrophic lateral sclerosis* (ALS) were beginning to appear. Soon after the 1939 season began, Gehrig took himself out of the lineup because of his weakening muscles. When the disease started, Gehrig was only 35 years old. By June 1941, he had died at the age of 38. The disease destroyed his physical capacities one by one, eroding the muscles he had worked so hard to build. He visited the Mayo Clinic in 1939, and the proper diagnosis was finally made. His physician there was Dr. Paul O'Leary, and during the next 2+ years, Gehrig and O'Leary exchanged >100 letters and telegrams, amounting to nearly 200 pages in all.

Throughout the correspondence, Gehrig made almost no mention of baseball or his Yankee teammates. Most letters concerned his illness. In the letters Gehrig provided precise details of his medical regimen and his deteriorating physical form, day by day and week by week. The letters also detailed the experimental treatments that Gehrig believed, almost to the end, might save his life. Several times when his condition began to slide sharply, when tremors shook his body and the simple act of getting up from his chair felt like a Herculean labor, he would begin to express doubts. On these occasions he would beg O'Leary to put aside the niceties and tell him the truth. He promised that he wouldn't fall apart. He promised not to give up. But, he insisted on knowing: Was there really a chance he might survive? He had been told several times that he had a 50-50 chance.

One letter from Gehrig to O'Leary asked, "What is your conclusion? And honestly please." The next letter to O'Leary, however, came not from Gehrig but from his wife, Eleanor, who stated, "There is no question that he is continually losing ground. . . . It must be very difficult for you to answer his last letter to you, and I feel we must all lie like mad. I want him to keep a thread of hope; there is no point in adding mental torture to the horrible experience he is now going through."

Gehrig also saw a physician in New York City, Dr. Israel Wechsler, who was well known for his vitamin E treatment of patients with ALS. Indeed, Wechsler published an article in the *American Journal of Medical Science* on his success with that therapy. The doctor wrote that 11 of his 20 ALS patients were showing improvement, 2 had recovered completely, 4 had shown marked improvement, and 5 had experienced moderate gains. Gehrig, referred to in the study as "L.G., male, age 36" fell into the "moderate gains group." In retrospect, of course, Wechsler's observations were meaningless because he had no controls.

On July 4, 1939, 2 months after Gehrig's playing days were finished, the Yankees honored him at halftime between a doubleheader with a ceremony near home plate. Gehrig heard nice words from the mayor, his manager, and teammates, and he was given some gifts. When all the speeches, presentations, and introductions were through, the moderator waited to see if Gehrig would address the audience. Gehrig hesitated and started walking away, but then the crowd chanted, "We want Lou." Joe McCarthy, the Yankee manager, gently encouraged him to speak. Gehrig bent slightly over the microphone and without notes began:

> For the past 2 weeks, you've been reading about a bad break. Today I consider myself the luckiest man on the face of the earth. I have been in ballparks for 17 years and have never received anything but kindness and encouragement from you fans. When you look around, wouldn't you consider it a privilege to associate yourself with such fine-looking men as are standing in uniform in the ballpark today? Sure, I'm lucky. Who wouldn't consider it an honor to have known Jacob Ruppert? Also, the builder of baseball's greatest empire, Ed Barrow? To have spent 6 years with such a grand little fellow as Miller Huggins? To have spent the next 9 years with that smart student of psychology, the best manager in baseball today, Joe McCarthy? Who wouldn't feel honored to room with such a grand guy as Bill Dickey? When the New York Giants, a team you would give your right arm to beat, and vice versa, sends you a gift—that's something. When the groundskeepers and the office staff and writers and old-timers and players and concessionaires all remember you with trophies—that's something. When you have a wonderful mother-in-law who takes sides with you in squabbles against her own daughter—that's something. When you have a father and mother who work all their lives so that you can have an education and build your body—it's a blessing. When you have a wife who has been a tower of strength and shown more courage than you dreamed existed—that's the finest thing I know. So I close in saying that I might have had a bad break, but I have an awful lot to live for. Thank you.

This speech is now listed as one of the great speeches by Americans (15).

Although Gehrig was offered several nonbaseball positions with good salaries, he accepted an invitation from New York Mayor Fiorello La Guardia to become a commissioner on the city's

parole board. The position paid only $5700 a year, but Gehrig appeared to love it.

Even as Gehrig's body failed, his mind remained clear and his memory sharp. From his letters and statements from friends and colleagues, it was obvious that he had an extremely bright mind.

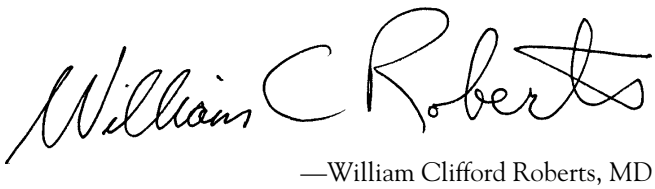
Had Gehrig been able to play for 4 or more additional seasons, it is probable that he, and not Babe Ruth, would have had the home run record and that it would have been far more difficult for Cal Ripken, Jr., to have broken his consecutive-game record. Eig's book not only illuminates the man, bringing out his full, human tragedy, but also frames the America Gehrig lived in—both a harder and a more innocent place.

Today, about 5000 Americans a year are diagnosed with ALS. The cause of the disease is still unknown and, of course, a cure is unknown. Most patients die as did Gehrig within 2 or 3 years of diagnosis. The disease now is widely referred to in the USA as "Lou Gehrig's disease." Gehrig lifted this rare and poorly understood malady from obscurity. Gehrig today is as famous for his disease as he is for his baseball accomplishments.

PERSONAL LEARNING AT THE POOL TABLE

As a 14-year-old youngster in the ninth grade, I wanted to play pool in the local pool hall above the Varsity restaurant in Atlanta, where I grew up. To play, I had to get a permit signed by my mother—who, bless her soul, did so with great trepidation. As a result, I started playing pool every weekend night. Games of pool rapidly accelerated to games of snooker. During the tenth grade and early eleventh grades, I got so hooked on snooker that it seriously interfered with my other activities. I decided that if I could get so addicted to a game, I had better not take up cigarette smoking or alcohol drinking for fear of addiction from either or both of them. Thus, during my junior year of high school, I gave up pool and snooker completely. I am sure my mother was a bit relieved by that decision.

In college, however, I found that my earlier time in the pool hall paid off. After pledging a fraternity at Southern Methodist University (Phi Delta Theta) as a still-to-shave freshman, I wandered one afternoon into the third-floor pool room of the fraternity house and found 3 of the varsity football players, fellow members of the fraternity, playing pool. After a while they asked if I would be interested in joining the game. I did and during the first game played rather badly, probably on purpose. (Pool is a relatively easy game if one grows up on snooker because the snooker tables are much bigger, the balls smaller, and the pockets smaller.) At any rate, during the next few games some bets were made and I cleaned the wallets of the 3 varsity football players. Thus, for a young freshman, I had quickly developed a favorable reputation with these athletes. I wrote my mother telling her of my success at pool and how her signing of the pool-hall permit 4 years earlier had proved useful to me. I never did smoke, and I waited until age 27 before picking up a drink of alcohol, so I guess the pool addiction was beneficial. Since then, I have played pool only a few times and I have never played snooker, but I miss both.



—William Clifford Roberts, MD
30 August 2005

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